

Work Order ID 161841***161841***

Page 1

Tuesday, May 23, 2017 10:57:17 AM

Item ID: D3811-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Seat Track

Start Date: 6/5/2017 Start Qty: 6.00

6

Cust Item ID:

Required Date: 6/9/2017 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals:

Process Plan:

Date: **MAY 23 2017**

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D3811	Rev A

100

0.00

100

BAND SAW

Bandsaw

Memo

0.02

Jeaspa Bandsaw

Cut blank 23.250 " long

6 0 P17-06-09

110

2.55

110

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

3.98

HAAS CNC vertical machine #1

1- Mill as per Folio FA776Rev: 7A & Dwg D3811 Rev: 7
2-Deburr per dwg D3808

6 0 P17-06-02

120

QC2- Inspect parts off machine FAI/FAIB

0.00

120

QC

Memo

0.06

Quality Control

6 0 P17-06-02

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

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Page 2

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Item Name: Seat Track

Start Date: 6/5/2017 Start Qty: 6.00

6

Cust Item ID:

Required Date: 6/9/2017 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* Mill Conv Conventional Milling Machine	CONVENTIONAL MILLING MACHINE Memo 1-DRILL REMAINIG HOLES	0.00 1.53				<u>6</u>	<u>0</u>		DAS 32 9-89 17-06-12
140 *140* QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.06				<u>6</u>	<u>0</u>		DAS 32 9-89 17-06-12
150 *150* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.12				<u>6</u>	<u>0</u>		DAS 08 9-89 D.A 17-06-12

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval			
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval			
Root Cause		FAULT CATEGORY									
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐									
Misidentified ☐	Past Due ☐										

Work Order ID 161841

Tuesday, May 23, 2017 10:57:17 AM

161841

Page 3

Item ID: D3811-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Seat Track
Start Date: 6/5/2017 Start Qty: 6.00 ***6*** Cust Item ID:
Required Date: 6/9/2017 Req'd Qty: 6.00 ***6*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 *160* HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 1.19				(x6)			201706113 BEB.
165 *165* QC Quality Control	QC7-Inspect Chemical Conversion Coat Memo	0.00 0.06				6			DAS 38 9-89 JUN 14 2017
170 *170* Packaging Packaging	Identify as per dwg & Stock Location: <u>St259</u> Memo LOCATION : GA	0.00 0.06				6			JUN 14 2017 DAS 6 9-80

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Misidentified ☐	Past Due ☐																																																																

Work Order ID 161841***161841***

Page 4

Tuesday, May 23, 2017 10:57:17 AM

Item ID: D3811-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Seat Track
Start Date: 6/5/2017 Start Qty: 6.00 ***6*** Cust Item ID:
Required Date: 6/9/2017 Req'd Qty: 6.00 ***6*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	QC21- Final Inspection - Work Order Release	0.00							
180									
QC	Memo	0.60							
Quality Control									

DAS
21
9-89

JUN 14 2017

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER :							
Misidentified ☐	☐ Past Due								

Picklist Print

Tuesday, May 23, 2017 10:57:15 AM

Page 1

Work Order ID: 161841

161841

Parent Item: D3811-1

D3811-1

Parent Item Name: Seat Track

Start Date: 6/5/2017

Required Date: 6/9/2017

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP Rev:A New Issue 08-07-31 JLM Verified By:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B1.500X02.50 0		Purchased	No			100	f	20.1250	2	12.63158			

M6061T6B1 500X02 500

**

6061-T6 Bar 1.50 x 2.50

Location

Loc Qty

Loc Code

MAT004

20.125

m134984

8.125

m137513

12

8.125
3.875

17-06-01

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Misidentified ☐	Past Due ☐																																																																

DART AEROSPACE LTD		Work Order:	161841
Description: Seat Track		Part Number:	D3811-1
Inspection Dwg: D3811 Rev: A		Page 1 of 2	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.40	+/-0.030	400			Micrometer	
6.70	+/-0.030	6.70				
0.700	+/-0.010	0.701				
1.400	+/-0.010	1.402				
0.990	+/-0.010	9915				
Ø0.281 x 0.44 deep	+0.006/-0.001 x +/-0.030	282 x .450				
0.780	+/-0.010	.780				
6.48	+/-0.030	6.48				
Ø0.196	+0.005/-0.001	.196				
Ø0.388 x 100°	+0.006/-0.001 x 0.5°	0.390	✓		Caliper	JCL-08
R0.13	+/-0.030	.125				
0.70	+/-0.030	.70				
6.44	+/-0.030	6.440				
R1.00	+/-0.030	1.00				
1.576	+/-0.010	1.576				
1.76	+/-0.030	1.770				
10.00	+/-0.030	9.9975				
0.590 pitch	+/-0.010	.590				
0.788 pitch	+/-0.010	.788				
23.00	+/-0.030	23.00	✓		Tape	
Ø0.323	+0.006/-0.001	0.324	✓		Caliper	JCL-08
0.27	+/-0.030	0.270	✓			
1.08	+/-0.030	1.080	✓			
20.68	+/-0.030	20.68	✓		Tape	
0.44	+/-0.030	.450				
1.24	+/-0.030	1.240	✓		Caliper	JCL-08
0.286 x 60°	+/-0.010 x 0.5°	.289 x 60°				
Ø0.388 x 100°	+0.006/-0.001 x 0.5°	388 x 100°				
R0.032	+/-0.010	.032				
0.132	+/-0.010	.130				
0.315	+/-0.010	.314				
0.015 x 30°	+/-0.010 x 0.5°	.015 x 30°				
0.100	+0.030/-0.010	.106				
1.98	+/-0.030	1.979				

DART AEROSPACE LTD		Work Order:	
Description: Seat Track		Part Number:	D3811-1
Inspection Dwg: D3811 Rev: A		Page 2 of 2	

FIRST ARTICLE INSPECTION CHECKLIST

☒ **First Article**

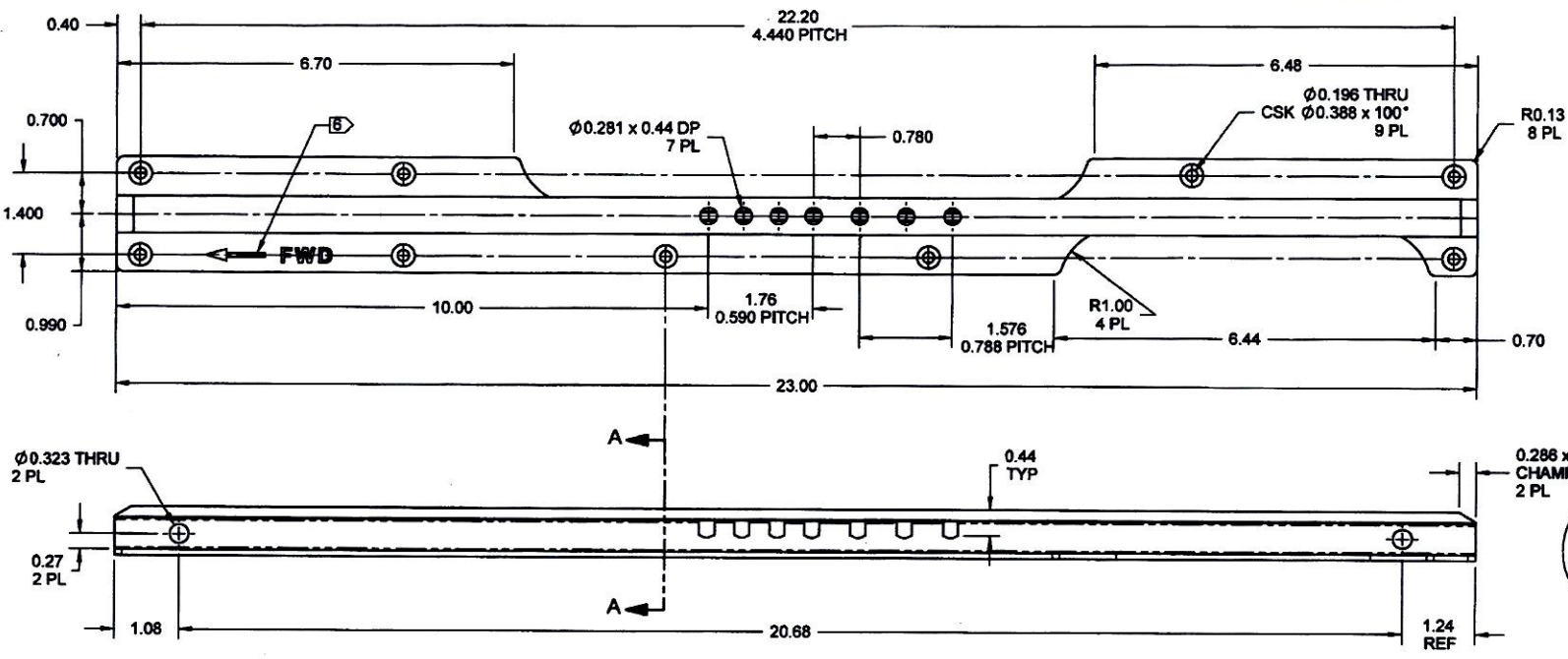
 ☐ **Prototype**

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.120	+/-0.010	.120				
0.730	+/-0.010	.733				
0.195	+/-0.010	.195				
0.630	+/-0.010	.630				

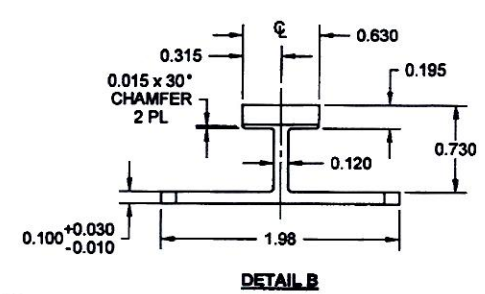
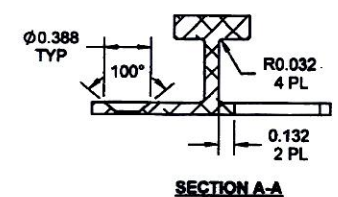
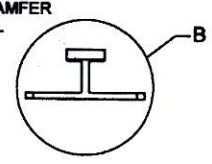
Measured by: <i>P12-06-12</i>	Audited by: <i>Dr</i> DAS 08	Prototype Approval:	N/A
Date: <i>17-06-12</i> 32 9-89	Date: <i>17-06-12</i> 9-09	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	09.05.19	New Issue	KJ <i>[Signature]</i>	<i>[Signature]</i>

8 7 6 5 4 3 2 1



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 161841
MAY 23 2017



D3811-1 SEAT TRACK

RELEASED
08.08.18

NOTES:

- 1) MATERIAL: 6061-T6 (OR T651/T6510/T6511/T62) ALUMINUM BAR PER AMS-QQ-A-200/8 (OR AMS 4180) OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116) (REF. DART SPEC. M6061T6B)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: ENGRAVE ARROW & FWD AS SHOWN USING 0.25 HIGH LETTERS TO MAX DEPTH OF 0.005
- 7) WEIGHT: 0.724 lbs

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D3811	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		SEAT TRACK ASSEMBLY	NTS
DATE	08.08.18	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE REPRODUCED OR COPIED OR OTHERWISE DISCLOSED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1